WHAT IS CLAIMED IS:

1. A semiconductor bonding apparatus which mounts a semiconductor chip via an elastic member disposed between the semiconductor chip and a mounting substrate, comprising:

a holding section which holds the semiconductor chip facing the mounting substrate;

a translatory gas bearing which is connected to the holding section and which is capable of moving the semiconductor chip in a bonding direction with respect to the mounting substrate;

a voice coil motor connected to the translatory gas bearing;

at least one load cell which detects a pressing force to be applied to the elastic member by the holding section, when the semiconductor chip is mounted; and

a driving section which generates a driving signal in accordance with the pressing force detected by the load cell to drive the voice coil motor.

2. The semiconductor bonding apparatus according to claim 1, further comprising:

a moving section which moves the holding section, the translatory gas bearing, and the voice coil motor,

wherein the load cell is disposed between the moving section and the voice coil motor.

3. The semiconductor bonding apparatus according

to claim 2, wherein the load cell is further disposed on a shaft which is a bearing object of the translatory gas bearing.

4. The semiconductor bonding apparatus according to claim 3, further comprising:

a display unit which displays the pressing force detected by the two load cells.

5. The semiconductor bonding apparatus according to claim 1, further comprising:

a moving section which moves the holding section, the translatory gas bearing, and the voice coil motor,

wherein the load cell is disposed on a shaft which is a bearing object of the translatory gas bearing.

6. The semiconductor bonding apparatus according to claim 5, further comprising:

a display unit which displays the pressing force detected by the load cell.

7. The semiconductor bonding apparatus according to claim 1, further comprising:

a display unit which displays the pressing force detected by the two load cell.

8. A semiconductor bonding apparatus which mounts a semiconductor chip via an elastic member disposed between the semiconductor chip and a mounting substrate, comprising:

holding means for holding the semiconductor chip facing the mounting substrate;

bearing means, connected to the holding means, for moving the semiconductor chip in a bonding direction with respect to the mounting substrate;

first moving means, connected to the bearing means, for generating a pressing force in the holding means;

first load detection means for detecting the pressing force to be applied to the elastic member by the holding means, when the semiconductor chip is mounted; and

driving means for generating a driving signal in accordance with the pressing force detected by the first load detection means to drive the first moving means.

9. The semiconductor bonding apparatus according to claim 8, further comprising:

second moving means for moving the holding means, the bearing means, and the first moving means,

wherein the first load detection means is disposed between the first and second moving means.

10. The semiconductor bonding apparatus according to claim 9, further comprising:

second load detection means, different from the first load detection means, for detecting the pressing force applied to the elastic member by the holding means,

the second load detection means being disposed on

the bearing means.

11. The semiconductor bonding apparatus according to claim 10, further comprising:

display means for displaying the pressing force detected by the first and second load detection means.

12. The semiconductor bonding apparatus according to claim 8, further comprising:

moving means for moving the holding means, the bearing means, and the first moving means,

wherein the first load detection means is disposed on the bearing means.

13. The semiconductor bonding apparatus according to claim 12, further comprising:

display means for displaying the pressing force detected by the first load detection means.

14. The semiconductor bonding apparatus according to claim 8, further comprising:

display means for displaying the pressing force detected by the first load detection means.